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Quality Engineering Test Report

SERIES: SP-200 200 WATTS SIGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A.SP-200-3.3 3.3V / 40A D.SP-200-12 12V /16.7A G.SP-200-24 24V /8.4A
B.SP-200-5 5V /40A E.SP-200-13.5 13.5V /14.9A H.SP-200-27 27V /7.5A
C.SP-200-7.5 7.5V /26.7A F.SP-200-15 15V /13.4A I.SP-200-48 48V /4.2A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:85-264VAC O/P:FULL LOAD	C: 66.2V~267VAC	P
2	LINE REGULATION	I/P:85-264VAC SPEC: O/P:FULL LOAD A: ±0.5% B: ±0.5% C:±0.5% D: ±0.5% E: ±0.5% G:±0.5% H: ±0.5% I: ±0.5%	A: -0. 18% - - 0.18% B: 0% - 0% C: -0.08% - +0.00% D: 0% - 0.04% E: 0% - -0.04% F: 0% - 0% G: 0% - 0% H: 0.02% - 0% I: 0% - 0.01%	P
3	LOAD REGULATION	I/P:230VAC SPEC: O/P:0% LOAD TO FULL LOAD A: ±1% B: ±1% C: ±1% D: ±0.5% E: ±0.5% F: ±0.5% G: ±0.5% H: ±0.5% I: ±0.5%	A: -0.39% - 0.935% B: -0.6% - 0.49% C: -0.33% - +0.24% D: 0.05 % - 0.14% E: 0% - -0.08% F: 0% - 0% G: 0.03% - 0.05% H: -0.06% - 0.06% I: 0.06% - -0.08%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:85~264VAC SPEC: O/P:0% LOAD TO FULL LOAD A: ±2% B: ±2% C: ±2% D: ±2% E: ±2% F: ±2% G: ±1% H: ±1% I: ±1%	A: -0.927% - +0.209% B: -1.1% - 0% C: -0.16% - -0.67% D: 0.05% - 0.2% E: 0% - 0.08% F: 0.07% - 0% G: 0.08% - 0% H: -0.01% - 0.1% I: -0.07% - 0.06 %	P
5	RIPPLE & NOISE	I/P:230VAC SPEC: O/P: FULL LOAD A:100mV B:100mV C:100mV D:100mV E:100mV F:100mV G:150mV H:150mV I:250mV	A: 43mV B: 62mV C: 76mV D: 49mV E: 47mV F: 43mV G: 57mV H: 74mV I: 63mV	P
6	AC INPUT CURRENT	I/P:230VAC SPEC: 1.4A(3.3V:1A) O/P:FULL LOAD	C:1.155A	P
7	MAX. INRUSH CURRENT	I/P:230VAC SPEC: 40A O/P:FULL LOAD	C:36.656A	P

NEXT

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC O/P:MIN. LOAD SPEC: +10% - -5% A:3.1V~3.6V B:4.7V~5.5V C:7.12V~8.25V D:11.4V~13.2V E:12.8 V~14.8V F:14.2V~16.5V G:22.8V~26.4V H:25.6V~29.7V I:45.6V~52.8V	A:3.103V~3.795V B:4.5V~5.8V C:6.323V~8.984V D:10.4V~13.87V E:10.73V~14.88V F:12.29V~17.49V G:19.3V~27.34V H:20.2V~30.3V I:41.8V~54.3V	P
9	SET UP TIME	I/P:230VAC O/P:FULL LOAD SPEC:600ms	C:249.8mS	P
10	HOLD UP TIME	I/P:230VAC O/P:FULL LOAD SPEC:20mS	C:30.785mS	P
11	EFFICIENCY	I/P:230VAC O/P: FULL LOAD SPEC: A:65% B:71% C:76% D:79% E:80% F:81% G:83% H:83% I:84%	A: 65.8% B: 72.1% C: 77.08% D: 80.56% E: 82.7% F: 82.3% G: 84.8% H: 84.6% I: 84.8%	P
12	OVER LOAD PROTECTION	I/P:230VAC O/P:TESTING SPEC:105%~150%	A: 125% B: 132% C: 124% D: 125% E: 125% F: 127% G: 113% H: 111% I: 128%	P
13	OVER VOLTAGE PROTECTION	I/P:230VAC O/P: TESTING SPEC:110%~135% A:3.63~4.45 V B:5.5~6.75V C:8.25~10.12V D:13.2~16.2V E:14.8~18.2V F:16.5~20.2V G:26.4~32.4V H:29.7~36.4V I:52.8~64.8V	A: 4.09V B: 5.83V C: 9.2V D: 14.5V E: 16.6V F: 18.4V G: 28.6V H: 35.5V I: 58.2V	P
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<2mA N-FG--<2mA	A: L-FG:0.3mA N-FG:0.25mA	P
15	GROUNDING CONTINUITY	SPEC: FG--CHASSIS<0.1Ohms/2min	C: 65mOhms	P
16	INSULATION RESISTANCE	SPEC: O/P-FG 500VDC / 100M Ohms MIN. I/P-O/P 500VDC / 100M Ohms MIN. I/P-FG 500VDC / 100M Ohms MIN.	C: O/P-FG >100MOhms I/P-O/P >100MOhms I/P-FG >100MOhms	P

PREVIOUS NEXT

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>TEST CONDITION / SPECIFICATION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>17</td><td>DIELECTRIC / WITHSTAND VOLTAGE</td><td>SPEC: I/P- O/P: 3000VAC/ 60 sec (10mA CUT-OFF)
I/P - FG: 1500VAC/60 sec (10mA CUT-OFF)
O/P - FG: 500VAC/60sec (10mA CUT-OFF)</td><td>C: I/P-O/P :4.38mA
I/P-FG :3.87mA
O/P- FG :3.26mA</td><td>P</td></tr>
<tr><td>18</td><td>BURN-IN TEST</td><td>I/P: 230VAC O/P:FULL LOAD
TA:25.3℃ BURN-IN DURATION : 2.0 hrs</td><td>B: NON BREAK</td><td>P</td></tr>
<tr><td rowspan="3">19</td><td rowspan="3">ENVIRONMENT TEST</td><td>1.LOW TEMPERATURE TEST
I/P : 230 VAC O/P : 80% LOAD
AMBIENT TEMPERATURE : -10.1°C</td><td>B:
AFTER 6 hrs POWER ON OK</td><td rowspan="3">P</td></tr>
<tr><td>2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST
I/P:230VAC O/P:FULL LOAD
AMBIENT TEMPERATURE : 40.1°C with cooling FAN</td><td>B :
AFTER 86 hrs NON BREAK</td></tr>
<tr><td>3.HIGH HUMIDITY HIGH VOLTAGE ON/OFF TEST
I/P : 272VAC O/P : FULL LOAD
AMBIENT TEMPERATURE : 25°C
AMBIENT HUMIDITY : 95%</td><td>B:
AFTER14.5hrs POWER ON/OFFNON BREAK</td></tr>
<tr><td>20</td><td>TEMPERATURE RISE TEST Trise OF PARTS</td><td colspan="2">B: I/P :230VAC AFTER 2 .5hrs BURN-IN
O/P :FULL LOAD TA:23.3°C
<table>
<tr><th></th><th>POSITION</th><th>P/N</th><th>TEMP</th><th>Trise</th></tr>
<tr><td></td><td>BD1</td><td>BRIDGE DIODE</td><td>40.3°C</td><td>17°C</td></tr>
<tr><td></td><td>Q2</td><td>MAIN TRANSISTOR</td><td>50.8°C</td><td>27.5°C</td></tr>
<tr><td></td><td>Q1</td><td>PFC TRANSISTOR</td><td>59.3°C</td><td>36°C</td></tr>
<tr><td></td><td>T1</td><td>MAIN TRANSFORMER COIL</td><td>54.6°C</td><td>31.3°C</td></tr>
<tr><td></td><td>T1</td><td>MAIN TRANSFORMER CORE</td><td>56.6°C</td><td>33.3°C</td></tr>
<tr><td></td><td>D20</td><td>O/P DIODE</td><td>65.2°C</td><td>41.9°C</td></tr>
<tr><td></td><td>C42</td><td>O/P FILTER CAPACITOR</td><td>50°C</td><td>26.7°C</td></tr>
<tr><td></td><td>L2</td><td>O/P CHOCK</td><td>88.3°C</td><td>65°C</td></tr>
<tr><td></td><td>C5</td><td>I/P FILTER CAPACITOR</td><td>42.3°C</td><td>19°C</td></tr>
<tr><td></td><td>LF1</td><td>LINE FILTER COIL</td><td>43.7°C</td><td>20.4°C</td></tr>
<tr><td></td><td>D2</td><td>PFC DIODE</td><td>41°C</td><td>17.7°C</td></tr>
</table></td><td>P</td></tr>
<tr><td>21</td><td>LIFE CYCLE</td><td colspan="2">SUPPOSE C42 IS THE MOST CRITICAL COMPONENT
I/P:230VAC O/P:FULL LOAD Ta:25°C Tc42 : 51.7°C Life:229432hrs
I/P:230VAC O/P:FULL LOAD Ta:40°C Tc42 : 74.5°C Life:64531hrs</td><td></td></tr>
<tr><td>22</td><td>CRITICAL COMPONENT RECORD
(FOR QC INSPECTION REFERENCE ONLY)</td><td colspan="3">B :
FUSE :4A/250V GFE/GNA
BRIDGE DIODE : D10XB60 4A/800V GL
LINE FILTER :TF-306
TRANSFOMER :TF-609
OUTPUT DIODE :SBL3040 30A/40V ESAD83-004
OUTPUT CAPACITOR :ELNA 2200uF/10V 105°C RJH
INPUT CAPACITOR :HITACHI 1000uF/400V,85°C HP3/USC
P.C.B :SP-200 CEM-3 20Z SS</td></tr>
</table>

PREVIOUS NEXT

DATE	SAMPLE	NOTE	TEST	APPROVAL
19990514	RD SAMPLE 5V,24V, 48V	PASS	H.C.LIOU	Max Lin
19990719	RD SAMPLE 5V,12V, 24V,48V	PASS	H.C.LIOU	Max Lin
19990719	PRODUCT SAMPLE 9911A33	PASS	C.C.CHEN	Max Lin
20000120	PRODUCT SAMPLE A001B04 5V,27V	PASS	C.C.CHEN	Max Lin
20000613	PRODUCT SAMPLE A006A21 3.3V	PASS	VINCENT	Max Lin
20000817	PRODUCT SAMPLE A006A21 3.3V	PASS	VINCENT	Max Lin
20010327	PRODUCT SAMPLE A103C03 3.3V	PASS	VINCENT	Max Lin
20010822	PRODUCT SAMPLE A107C07D 7.5V	PASS	VINCENT	Max Lin

PREVIOUS